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HYDROGEOLOGY

MEMORANDUM

RE: Evaluation of Carolina Plating Works, Inc. facility's status under the RCRA Info
Corrective Action Environmental Indicator Event Code CA725
EPA ID Number SCD 003 351 996

FROM: Kim D. Tappa, PG, Hydrogeologist *KDT*
RCRA I Hydrogeology Section
Division of Hydrogeology
Bureau of Land and Waste Management

THRU: Jack Gelting, PG, Section Manager *JG*
RCRA I Hydrogeology Section
Division of Hydrogeology
Bureau of Land and Waste Management

G. Kendall Taylor, PG, Division Director *GKT*
Hydrogeology Division
Bureau of Land and Waste Management

TO: Carolina Plating Works, Inc. Project File
EPA ID # SCD 003 351 996
Central File Room # 050891

DATE: June 23, 2003

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of Carolina Plating Works, Inc. (CPW) facility's status in relation to the Current Human Exposures Under Control (CA725) corrective action event code defined in the Resource Conservation and Recovery Act Information System (RCRA Info).

An evaluation of CPW's status in relation to the current Contaminated Groundwater Under Control (CA750) corrective action event code will be finalized under separate cover.

Concurrence by the RCRA Hydrogeology I Section Manager and the Division of Hydrogeology
HW030454.kdt

Director is required prior to entering this event code into RCRA Info. Your concurrence with the interpretation provided in the following paragraphs and the subsequent recommendation is satisfied by dating and signing at the appropriate location within Attachment I.

II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS

This particular evaluation is the second evaluation for the Carolina Plating Works, Inc. facility with regard to the CA 725 corrective action event code. The previous evaluation was complete on September 19, 1996 (memorandum from Overcash to Gelting). Based on the information available at the time, a status code of "NO" was entered into RCRA Info.

III. FACILITY SUMMARY

Carolina Plating Works, Inc. is a metal plating facility that electroplates various steel assembled components for other industries. The Carolina Plating Works, Inc. facility is located at 1101 West Blue Ridge Drive, Greenville, SC. Past electroplating operations at the facility generated wastewater containing copper cyanide, cadmium cyanide, zinc chloride and tin. Rinse water contained cyanide and hexavalent chromium. The Postclosure Care Hazardous Waste Permit for one closed surface impoundment (SWMU No. 3) was renewed, effective August 16, 2001.

There are nine SWMUs at Carolina Plating Works, Inc. for which a RCRA Facility Investigation (RFI) has been completed. The Final RFI Report document is dated August 15, 2001 and was conditionally approved on July 17, 2002. SWMUs 2, 6&7, 8 and 9 were identified as having been impacted by past practices at the facility. A Corrective Measures Study for these SWMUs, dated November 11, 2002, has been submitted.

IV. CONCLUSION FOR CA725

Name and ID No.	Location (City or Town)	Date of Latest EI Memo	CA 725 Decision
Carolina Plating Works, Inc. SCD 003 351 996	Greenville, SC	June 23, 2003	"YE"

SUMMARY OF FOLLOW-UP ACTIONS

The Final RFI Report, which was conditionally approved, included a qualitative risk assessment. The Corrective Measures Study has been completed and is currently being reviewed.

The Current Human Exposures Under Control EI determination will be updated as necessary upon the discovery of new or contrary information.

Attachment I. CA725: Current Human Exposures Under Control

cc: Keehna Frasier, Operations Engineering Section
 Doug Johns/Susan Turner, Appalachia II EQC
 Narindar Kumar, EPA Region 4

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Event Code (CA725)**

Interim Final 2/5/99

ATTACHMENT 1

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action

Environmental Indicator (EI) RCRIS Code (CA725)

Current Human Exposures Under Control

Facility Name: Carolina Plating Works, Inc
Facility Address: 1101 West Blue Ridge Drive, Greenville, SC 29609
Facility EPA ID #: SCD 003 351 996

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

- ☒ If yes - check here and continue with #2 below,
☐ If no - re-evaluate existing data, or
☐ If data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Current Human Exposures Under Control

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Environmental Indicator (EI) RCRIS Event Code (CA725)

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **“contaminated”**¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater	✓			Trichloroethene, chloroform, methyl chloride, barium, cadmium, chromium
Air (indoors) ²			✓	Not measured. Plume is downgradient of facility, which is also operating.
Surface Soil (e.g., <2 ft)	✓			In area of SWMU 6&7, acetone, cadmium and chromium are found at levels above the residential RBCs.
Surface Water		✓		Analytical results below detection levels or below background levels.
Sediment		✓		Analytical results below detection levels
Subsurface Soil (e.g., >2 ft)	✓			In area of SWMU 6&7, acetone, cadmium and chromium are found at levels above the residential RBCs.
Air (outdoors)			✓	No evidence of releases.

_____ If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

✓ If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter AN@status code.

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Event Code (CA725)**

Interim Final 2/5/99

Rationale and Reference(s):

Soils

Final RFI Report, August 15, 2001

Groundwater

Final RFI Report, August 15, 2001

2002 Annual Groundwater Assessment and Corrective Action Report

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Event Code (CA725)

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3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table Potential Human Receptors (Under Current Conditions)							
“Contami- nated” Media	Residents	Workers	Day- Care	Construction	Trespassers	Recreation	Food³
Groundwater	No	No	No	No	No	No	No
Air (indoors)							
Soil (surface, e.g., <2 ft)	No	Yes	No	Yes	Yes	No	No
Surface Water							
Sediment							
Soil (subsurface, e.g., >2 ft)	No	No	No	Yes	No	No	No
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. For Media which are not “contaminated” as identified in #2, please strike-out specific Media, including Human Receptors’ spaces, or enter “N/C” for not contaminated.
2. Enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have assigned spaces in the above table. While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

✓_____ If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Human contact with surficial soil contamination is possible at SWMU 6&7 via the maintenance worker, trench worker and trespasser scenarios, and human contact with subsurface soil contamination at SWMU 6&7 is possible via the trench worker scenario (Final RFI Report, August 15, 2001).

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Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

- ☒ If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
- ☐ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
- ☐ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

The potential for exposure of a trespasser to contaminated surficial and subsurface soil is minimized by institutional controls such as fencing and signs. The Corrective Measures Study (CMS), dated November 11, 2002, proposes additional fencing and signage. The potential for exposure of a maintenance worker or trench worker to contaminated surficial and subsurface soil is minimized by controls such as use restriction for workers. This includes advisories during worker safety meetings and requirements for appropriate personal protective equipment (CMS, 11/11/2002). Also, a notation has been previously placed on the deed for the property, stating that hazardous waste materials were managed on the property and that the use of the property is restricted.

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If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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5 Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

- _____ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).
- _____ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.
- _____ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s): _____

Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

☒ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Carolina Plating Works, Inc. facility, EPA ID # SCD 003 351 996, located at 1101 West Blue Ridge Drive, Greenville, SC under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

☐ NO - "Current Human Exposures" are NOT "Under Control."

☐ IN - More information is needed to make a determination.

Completed by Kim D. Tappa Date: 6/23/03

Kim D. Tappa, P.G.
RCRA I Hydrogeology
Bureau of Land and Waste Management

Supervisor John R. Gelting Date 6/2003⁵
John R. Gelting, P.G., Manager
RCRA I Hydrogeology
Bureau of Land and Waste Management

Locations where References may be found:

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USEPA Region 4
RCRA Programs Branch
Waste Management Division
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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.